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ABSTRACT

"Analysis of Teacher-Directed Experimentation" (ALF) is a project currently underway in Sweden. In Swedish terminology, a distinction is made between central, regional, and local educational development work; these terms indicate the level within the school system at which a particular kind of development work is conducted. Teacher-directed experimentation can be viewed as a variant of local educational development work. These teacher-directed experiments are essentially a form of development work which teachers regard as "their own," as distinct from development work enjoined "from outside" or "from the top." The ALF project describes and analyzes instances of teacher-directed experimentation (through interviews with the teachers) in order to pinpoint the conditions and principles involved. The project's focus is two-fold: (1) the scope, focus, conditions, and implications for schools of teacher-directed experimentation; and (2) teacher-directed experimentation as an expression of views entailed by the teaching profession of conditions governing school work. This interim report presents summaries of a number of detailed studies conducted by the ALF. A bibliography of reports from the project is included. (JD)

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I. The ALF project in brief

ALF is short (in Swedish) for "Analysis of teacher-directed experimentation". But what does this mean? In current Swedish terminology, a distinction is made between central, regional and local educational development work; above all, these terms indicate the level within the school system at which a particular kind of development work is conducted. Teacher-directed experimentation can be viewed as a variant of local educational development work. These teacher-directed experiments are essentially a form of development work which teachers regard as "their own", as distinct from development work enjoined "from outside" or "from the top".

Within the ALF project, we are trying to describe and analyse various instances of teacher-directed experimentation so as to pinpoint the conditions and principles involved. This can be intrinsically useful, for example in view of the efforts now being made to decentralise the Swedish school system. But it can also provide a means of sizing up teaching as a profession, including the professional knowledge and attitudes which it confers.

A great deal of the work of the ALF project has been of a qualititative nature and has been prominently based on analyses of extensive interviews of teachers who have carried through their own experiments. Our main reason for adopting the qualitative approach is that we are on unfamiliar ground and therefore wish to minimise our use of predefined concepts and categories.

The ALF project has been funded by the National Board of Education (Project No. 6169) for three years and is to be concluded at the end of the current fiscal year. The grant has mainly covered the costs of a research fellow, but it has also been possible to attach additional personnel resources to the project for longer or shorter periods in connection with

particular detailed investigations. The project is based on the Education Department of Uppsala University and has also pre-empted the greater part of the non-teaching duties of an assistant professor attached to the Department.

II. Purpose of the interim report

The ALF project has now entered its final year. A few more analyses remain to be undertaken before the final report is presented, but most of our reporting will have been completed by the end of the 1983/84 fiscal year. On the other hand, we may conceivably follow up certain threads in a number of separate studies later on. Our inquiries under the ALF project have focused on two sides of teacher-directed experimentation. One of these is concerned with teacher-directed experimentation as such, i.e. their focus, scope, conditions and implications for schools. The other is concered with teacher-directed experimentation as an expression of the views entailed by the teaching profession of the conditions governing school work. These two sides are combined in dealing with teacher-directed experimentation as professional efforts in a regulated environment.

Teacher-directed experimentation have been investigated in a number of detailed studies. The purpose of this interim report is to present the detailed studies very briefly and to show what part they play in the project programme. The interested reader can then go straight to the various reports for further details concerning the results yielded by the project in these respects.

III. Methods studies

In the course of the project, we have employed various approached in order to identify and analyse teacher-directed experimentation. In some cases we have employed current quantitative techniques of data collection and process-

ing; these are commented on in the investigation reports as such.

As regards qualitatively oriented studies of a phenomenographic nature, we have endeavoured to utilise and enlarge on the experience gained by the INOM group* in Göteborg. Methodologically, we have been able to utilise the work contained in Hasselgren's study of pre-school student teachers "Ways of apprehending children at play: A study of pre-school student teachers' development" (ALF-rapport no. 4). In connection with the qualitative analyses, problems arose concerning the distinction between <u>what</u> is apprehended and <u>how</u> it is conceived of. This and other problems concerning phenomenography as a method are discussed in general terms in the article "How does one study teachers' conception of the world around us? Or: A discussion of phenomenography as a normal science." ALF-anteckning no. 12). This distinction between <u>what</u> and <u>how</u> is discussed, with a direct bearing on our own analyses, in the note "Why is technology being made compulsory in compulsory schools during the 1980s? A study of teachers' declared opinions." (ALF-anteckning no. 13). The same article also suggests ways of tackling this problem of method.

As one of the features our phenomenographically oriented studies, the teachers interviewed have been "indirectly" induced to express themselves concerning the aspects in which we are interested. The contrast between descriptions given in response to these indirect questions and those given in response to direct questions is illustrated in the article "Debate on educational ideas and teacher-directed experimentation" (ALF-anteckning no. 11).

*See Ference Marton, "Phenomenography - describing conceptions of the world around us", <u>Instructional Science</u>, No. 10, 1981, pp. 177-200.

IV. The terms of teacher-directed experimentation

The volume of teacher-directed experimentation in Sweden during the spring term 1982 was studied by means of a survey covering a random sample of schools and school management districts. The quantitative results of this study, which among other things show that teacher-directed experimentation are being conducted at one-third of the country's schools and in two-thirds of its school management districts, have been presented in the note "Teacher-directed experimentation - are there any? Report on a quantitative approach." (ALF-anteckning no. 7), while variations of focus and character will be presented later.

The character of teacher-directed experimentation, focusing on learning by doing, has been studied on the basis of the inventory compiled by the 1946 Schools Commission. The results of this study have been published in "Learning by doing in an historical perspective, with reference to the 1946 educational inventory" (ALF-rapport no. 7). A similar analysis has also been made of a material collected in connection with work on Lgr 80 (the 1980 Compulsory School Curriculum) in the journal Läroplansdebatt (unpublished MS 1). Judging by what we can see at present, the view taken by "learning-by-doing" educationalists of problems in schools and, accordingly, of resistance to their own activities agrees with that entertained by the "organic" reading (LTG) teachers. On the other hand, there are formal differences between the replies to the 1946 educational inventory and the viewpoints canvassed in connection with work on Lgr 80. In the former instance, more reference is made by the respondents to their own experimentation, whereas in the latter instance references of this kind are extremely rare. Furthermore, barely one-third of the replies preparatory to Lgr 80 are given by individual teachers; instead, statements are made by organisations and conferences.

The experimentation of county education committees in supporting and encouraging local development work have been examined in a special study described in ALF-rapport no. 6 ("Support and encouragement for local educational development work? An evaluation of experimentation by five county education committees to support and encourage local development work, 1978/79-1981/82."). One conclusion drawn on the basis of this study is that certain municipalities learned how to get money out of the county education committees. Another is that, as things now stand, the county education committees are well equipped to encourage but have difficulty in supporting locally conducted educational development work.

The terms of educational development work have also been studied with reference to the feasibility of co-operation between research and INSET. Experience here is based on the analysis of experimentation conducted in four in-service training regions and focuses on underlying views of the co-operation concerned. It has been possible to construct two ideal types which can be said to encapsulate the various approaches to co-operation (unpublished MS 2).

Finally, there are two more reports which can be mentioned concerning the terms of teacher-directed experimentation. One of these, "The practice of school-centred innovation: A Swedish case." (ALF-anteckning no. 15) analyses the relationship between positions in the local school hierarchy and opportunities of entering, publicising and being informed about local educational development work. The other, "The debate on LTG in Lärartidningen" (ALF-rapport no. 8), is a study of the debate on LTG in the professional journal Lärartidningen-Svensk skoltidning between 1974 and 1983. These analyses show, for example, that the advocates of the LTG method, in contrast to the other protagonists in the debate, tended more to base their arguments on premises of general methods rather than reading education methods.

V. Teacher-directed experimentation as expressions of views concerning the terms of school work

These studies focus on teachers' views of various aspects conceivably affecting teacher-directed experimentation. The initial thesis implies that these views can be presumed to have an important bearing, a guiding influence, on the choice of conceivable topics of teacher-directed experimentation. The same assumption also applies to the manner in which it is decided to tackle problems. Here we have adopted four approaches:

- Experimentation as practical problem-solving.
- Experimentation within the formal organisational framework of schools.
- Experimentation and the debate on educational ideas.
- Experimentation with reference to school-community relations.

Most of the documentation underlying this part of our studies has been based on extensive (up to three hours long) and structured semi interviews of 20 teachers with experience of LTG ("organic" reading) and Children and Technology at junior and intermediate levels.

Viewing teacher-directed experimentation in a "practical problem-solving perspective" in this context involves identifying the problems which teachers believe they are tackling through their experimentation. It also means finding out what is regarded as the root or cause of the problem concerned and the quarter in which the solution to the problem is to be found. In the problem-solving perspective we also concern ourselves with what is taken to be the result of the experimentation. We have performed this analysis both in the group concerned with LTG and in the group concerned with Children and Technology. The results of the former analysis have been published in the report "Why LTG? Practical answers to an

unpractical question." (ALF-rapport no. 5). The report on the latter analysis has yet to be completed, and no comparisons have yet been undertaken between the two categories of teacher-directed experimentation.

Another aspect is concerned with the 'organisational imperatives', i.e. the fact of belonging to a formal organisation; these imperatives are sometimes breached in the course of experimentation. In this connection, analyses have been made of the way in which people conceive of the organisational imperatives during both LTG and Children and Technology experiments. The results have been presented in "Organisational imperatives - do they exist?" (ALF-anteckning no. 8), and they show that the organisational imperatives, although to a great extent lacking explicit meaning, exist implicitly in the form of controls, checks, impediments and support affecting the experimentation in which teachers are engaged.

Opinions concerning the debate on educational ideas and its importance in relation to teacher-directed experimentation are presented in the article "Debate on educational ideas and teacher-directed experimentation" (ALF-anteckning no. 11). This article also includes certain comparisons between the LGT and Children and Technology experiments. Whereas in both groups the debate on educational ideas is felt to provide impulses for experimentation, practice has shown that where LTG is concerned, people have begun to take an interest in the debate on ideas as a result of their own experimentation. To many of those concerned with Children and Technology, the debate on educational ideas was in fact quite irrelevant.

As yet, only preliminary analyses have been made of teacher-directed experimentation and school-community relations.

To these analyses of conceptions concerning certain aspects of work in schools are added a few others concerned more specifically with the two experiments. In one study we have exam-

ined replies to the question why people "latch onto" LTG. This study forms part of the report "Why LTG? Practical answers to an unpractical question." (ALF-rapport no. 5). Here it transpires that interest in LTG teaching is rooted in experience of one's own professional role rather than interest in teaching the pupils to read. As regards Children and Technology experiments, we have examined the spirit in which the participating teachers joined the scheme and we have studied the way in which they interpreted the reason for technology being made compulsory at junior and intermediate levels. In the note "In what spirit do teachers enter into Children and Technology experimentation?" (ALF-anteckning no. 9), we present two categories, viz those who regard experimentation as something imposed from outside, their own task being to find things which can be fed into their teaching, and those who regard experimentation as an opportunity of practically testing points they have been thinking about and which they may also have tested in other contexts. In the note "Why is technology being made compulsory in compulsory schools during the 1980s? A study of teachers' declared opinions?" (ALF-anteckning no. 13), views on this subject are presented in three categories, viz (1) the subject is a result of schools having to adjust to social development, (2) the subject is a result of schools having to counteract certain aspects of social development, and (3) the subject is a result of underlying and conflicting vested interests.

Since neither LTG nor Children and Technology is an unambiguously defined educational phenomenon, we have also chosen to examine the way in which people conceive of their experimentation. Thus interviewees' interpretations of teaching by the LTG method vary from applying a method of reading instruction in the narrow sense to having an attitude towards teaching which also holds implications concerning life outside school (unpublished MS 3). Experimentation concerning Children and Technology are viewed in relation to the overriding objectives of the curriculum or teaching methodology (unpublished MS 4). We also have certain results showing how teachers got hold of

ideas about changing their teaching ("How do practising teachers acquire ideas and impulses for changing their teaching? A study of 38 teachers' views of this question."; ALF-anteckning no. 14). This survey also shows that the teachers interviewed regard visits to colleagues as the best way of disseminating innovations in schools.

VI. Discussion of the results obtained so far

The empirical material has not yet been fully analysed, and the results have not been explicitly related to their theoretical context or, consequently to one another. In other words, we lack the holistic context needed to facilitiate well-founded conclusions concerning teacher-directed experimentation and the character of the teaching profession. Even so, it may perhaps be worth while presenting some thoughts on the implications of the results, together with a number of preliminary conclusions.

Starting with teacher-directed experimentation, we find that it does not only exist on an analytical basis. Teacher-directed experimentation exists in practice and people are prepared to use the term in schools. The meaning of the term, however, is by no means unambiguous, and very often it conflicts with teachers' images of their professional practice and their own experimentation. The occurrence or non-occurrence of teacher-directed experimentation is not connected with structural factors such as size of school, catchment area, character of the municipality and so on. On the other hand, structural factors of this kind may influence the focus of experimentation, though at present we are unable to say how.

What can influence the occurrence of teacher-directed experimentation, however, is the action taken by school authorities to encourage experimentation, for example by means of information and financial support. Measures of this kind are found to account for regional differences. At the same time they also result in practice in a departure from genuine teacher-directed

experimentation. Instead we have activities which are bolstered by various means and in this way become more sensitive to external influence. There is cause here to query the point of encouraging teacher-directed experiments by external funding unless there are genuine opportunities of following up the experiments and the experience accruing from them. Funding can serve to purchase working hours and perhaps also involvement, and with a very modest outlay it is possible to sanction activities which would otherwise be considered somewhat eccentric. But most of these efforts are presumably wasted unless they are followed up. The risk of excessive interference has presumably been exaggerated where serious experimentation are concerned.

We do not yet feel in a position to explain why teacher-directed experimentation occur in certain schools and are conducted by certain teachers but not by others. Disregarding cases where experimentation has been imposed from outside, however, we are able to give two answers to the question as to why teacher-directed experimentation materialises. Both these answers refer to internal school conditions. The first is connected with teaching and its repetitive character: teachers, finding their work monotonous, experience a need to do something different, and something which they feel they can sympathise with. The second answer is connected with the changing conditions of teaching: what goes on in the classroom under the present circumstances can no longer be designated teaching. But by referring to new pedagogics, one can once more refer to classroom activities as teaching.

In this connection we would also like to point out that there is no real reason for regarding teacher-directed experimentation as a rational problem-solving process in which problems and needs are analysed and various alternatives are appraised in terms of their calculated consequences. We have not found anything of this kind. What we have found is a concern to substantiate preconceived notions of sound pedagogics. The

practising teacher follows and intervenes in a process which must work and must be regarded as plausible and correct by the parties involved, viz parents, pupils, other teachers, subsequent classes etc. There is little we are able to say concerning the consequences of this process. What we can do is to reproduce certain episodes or to conjecture. Teacher-directed experimentation shares these properties with current teaching, the reason being that teaching work rests on practical rather than theoretical foundations.

It is not to be concluded from this account that teacher-directed experimentation is incapable of contributing towards the development of schools and teaching. By definition, teacher-directed experimentation has a practical and authentic foundation which cannot be supplanted by theoretical analyses or statistical calculations. One conceivable conclusion, however, is that teacher-directed experimentation provides an opportunity to make sense of what may seem to be an absurd school system.

VII. Reports from the ALF project

1. Lindblad, S. & Hasselgren, B. Plans for an analysis of teacher-directed experimentation. Sketch presented at the NFPF Congress, Lillehammer 1979. Arbetsrapport från pedagogiska institutionen, Uppsala universitet, no. 27, 1980.
   (In Swedish)

2. Hasselgren, B. & Lindblad, S. Programme document for the analysis of teacher-directed experimentation. Arbetsrapport från pedagogiska institutionen, Uppsala universitet, no. 28, 1980.
   (In Swedish)

3. Lindblad, S. Concerning the decentralisation of the Swedish school system and educational development work. Sketch presented at the WFPF Congress, Göteborg 1980. Arbetsrapport från pedagogiska institutionen, Uppsala universitet, no. 29, 1980.
(In Swedish)

4. Hasselgren, B. Ways of apprehending children at play: A study of pre-school student teachers' development. Göteborg studies in educational sciences 38. Göteborg: Acta Universitatis Gothoburgensis, 1981.

5. Hasselgren, B. Why LTG? Practical answers to an unpractical question. Arbetsrapport från pedagogiska institutionen, Uppsala universitet, no. 44, 1982.
(In Swedish)

6. Ahlgren, I., Hardardottir, M., Lindblad, S. & Nordström, S. Support and encouragement for local educational development work? An evaluation of experimentation by five county education committees to support and encourage local development work, 1978/79-1981/82. Pedagogisk forskning i Uppsala. Pedagogiska institutionen, Uppsala universitet, no. 33, 1982.
(In Swedish)

7. Löthman, A. Learning by doing in an historical perspective, with reference to the 1946 educational inventory. Arbetsrapport från pedagogiska institutionen, Uppsala universitet, no. 65, 1983.
(In Swedish)

8. Kristinsdottir, J. Debate on educational ideas and teacher-directed experimentation, Arbetsrapport från pedagogiska institutionen, Uppsala universitet, no. 69, 1983.
(In Swedish)

VIII. Notes from the ALF project

1. Lindblad, S. What are educational historians concerned with - rhetoric or educational practice? Notes from an international conference on "Educational innovation in historical context" in Jablonna, Warsaw, on 24th-27th September 1980. Tidskrift för Nordisk Förening för Pedagogisk forskning, no. 4, pp. 43-47, 1980.
   (In Swedish)

2. Hasselgren, B. & Lindblad, S. How do you analyse teacher-directed experimentation? Contribution to a mini-symposium on the "Education and research ideologies" projects, Göteborg 11th-12th December 1980. Department of Education, Uppsala University, 1980.
   (In Swedish)

3. Lindblad, S. Principles of teacher-directed experimentation. Published in Lindberg, D-H. (ed.): Teknik och teknologi i grundskolan. Barn och teknik, no. 4, pp 92-102, Skolöverstyrelsen, Stockholm, 1979.
   (In Swedish)

4. Hasselgren, B. Inventory of reports on teachers experiments with LTG ("organic" reading): The county education committees. Department of Education, Uppsala University, 1981.
   (In Swedish)

5. Lindblad, S. On the art of calculating fixed prices. A discussion based on NBE funding of educational development work in schools, 1972/73-1979/80. Department of Education, Uppsala University, 1981.
(In Swedish)

6. Hasselgren, B. & Lindblad, S. The regional colleges and research. Forskning om utbildning, no. 1, p 42, 1982.
(In Swedish)

7. Lindblad, S. Teacher-directed experimentation - where are they? Presenting a quantitative approach. Contribution to the NFPF Congress, Copenhagen October 1982. Department of Education, Uppsala University, 1982.
(In Swedish)

8. Hasselgren, B. Organisational imperatives - do they exist? Presenting a qualitative approach. Contribution to the NFPF Congress, Copenhagen October 1982. Department of Education, Uppsala University, 1982.
(In Swedish)

9. Lindblad, S. In what spirit do teachers enter into Children and Technology experimentation? Department of Education, Uppsala University, 1982.
(In Swedish)

10. Lindblad, S. Evaluation as a rational measure. Uppsala universitet, Sektorn för undervisningsyrken, rapport no. 7, 1983.
(In Swedish)

11. Hasselgren, B. Debate on educational ideas and teacher-directed experimentation. Tidskrift för Nordisk Förening för Pedagogisk Forskning, no. 2, pp 16-26, 1983.
(In Swedish)

12. Lindblad, S. How does one study teachers' conception of the world around us? Or: A discussion of phenomenography as a normal science. Tidskrift för Nordisk Förening för Pedagogisk Forskning, no. 2, pp 27-38, 1983.
(In Swedish)

13. Lindblad, S. Why is technology being made compulsory in compulsory schools during the 1980s? A study of teachers' declared opinions. Department of Education, Uppsala University, 1983.
(In Swedish)

14. Gudmundsdóttir, H. & Ólafsdóttir, M. How do practising teachers acquire ideas and impulses for changing their teaching? A study of 38 teachers' views of this question. Department of Education, Uppsala University, 1983. (In Swedish)

15. Lindblad, S. The practice of school-centred innovation: A Swedish case. Journal of Curriculum studies. (In press)

16. Hasselgren, B. & Lindblad, S. The project "Analysis of teacher-directed experimentation". An interim report. Department of Education, Uppsala University, 1983.
(In Swedish)

IX. Unpublished MSS from the ALF project

1. Sverker Lindblad, 1981: Opinions and curricula debate. Teachers' opinions concerning education and teaching as expressed in letters to the NBE Curricular Group 1977-1980.
(In Swedish)

2. Gunilla Zackari, 1983: Partnership between research and INSET.
(In Swedish)

3. Pétur Hafstein, 1983. Opinions of LTG. How do 19 LTG teachers view their activities with reference to their LTG experiment?
(In Swedish)

4. Pétur Hafstein, 1983. (Opinions concerning Children and Technology at junior and intermediate levels.)
(In Swedish)